

CAS ONLINE PRINTOUT

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(FILE 'HOME' ENTERED AT 08:25:55 ON 05 MAR 2008)

FILE 'REGISTRY' ENTERED AT 08:26:08 ON 05 MAR 2008

L1               STRUCTURE UPLOADED  
L2               0 S L1  
L3               STRUCTURE UPLOADED  
L4               10 S L3  
L5               STRUCTURE UPLOADED  
L6               26 S L5  
L7               STRUCTURE UPLOADED  
L8               0 S L7 CSS  
L9               19 S L7  
L10              STRUCTURE UPLOADED  
L11              7 S L10  
L12              281 S L10 FUL

FILE 'CAPLUS' ENTERED AT 08:33:07 ON 05 MAR 2008

L13              302 S L12  
L14              10 S HYDROXYALKOXYSILANE?  
L15              13 S HYDROALKOXYSILANE?  
L16              23 S L14 OR L15  
L17              0 S L16 AND L13

FILE 'REGISTRY' ENTERED AT 08:38:54 ON 05 MAR 2008

L18              STRUCTURE UPLOADED  
L19              3 S L18 CSS  
L20              404 S L18 CSS FULL

FILE 'CAPLUS' ENTERED AT 08:39:53 ON 05 MAR 2008

L21              4226 S L20  
L22              0 S L12 AND L21

FILE 'REGISTRY' ENTERED AT 08:43:02 ON 05 MAR 2008

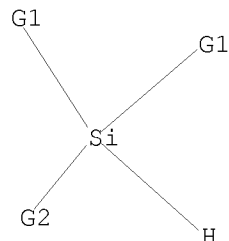
L23              1 S SODIUM FORMATE/CN  
L24              1 S SODIUM ACETATE/CN  
L25              1 S POTASSIUM FORMATE/CN  
L26              0 S POTASSIUM ACETATE/CN  
L27              1 S POTASSIUM ACETATE/CN  
L28              1 S SODIUM PROPIONATE/CN  
L29              1 S MAGNESIUM ACETATE/CN  
L30              161597 S L23 OR L24 OR L25 OR L27 OR L28 OR 29

FILE 'CAPLUS' ENTERED AT 08:45:21 ON 05 MAR 2008

L31              25937 S L23 OR L24 OR L25 OR L26 OR L27 OR L28 OR L29  
L32              15 S L21 AND L31

=> d 118

L18 HAS NO ANSWERS  
L18              STR



G1 MeO, EtO, n-PrO, i-PrO, n-BuO, i-BuO, s-BuO, t-BuO

G2 MeO, EtO, n-PrO, i-PrO, n-BuO, i-BuO, s-BuO, t-BuO, Ak

Structure attributes must be viewed using STN Express query preparation.

=> d bib abs kwic 1-15

L32 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2006:122077 CAPLUS

DN 144:370145

TI Platinum Oxide Catalyzed Silylation of Aryl Halides with Triethylsilane:  
An Efficient Synthetic Route to Functionalized Aryltriethylsilanes

AU Hamze, Abdallah; Provot, Olivier; Alami, Mouad; Brion, Jean-Daniel

CS Laboratoire de Chimie Therapeutique BioCIS - CNRS (UMR 8076), Universite  
Paris-Sud XI, Chatenay-Malabry, 92296, Fr.

SO Organic Letters (2006), 8(5), 931-934

CODEN: ORLEF7; ISSN: 1523-7060

PB American Chemical Society

DT Journal

LA English

OS CASREACT 144:370145

AB The first platinum-catalyzed selective silylation of aryl halides  
including aryl iodides and bromides having an electron-withdrawing group  
is described. The reaction takes place rapidly in NMP with triethylsilane  
as a silicon source and sodium acetate to provide functionalized  
aryltriethylsilanes in moderate to good yields. Heteroarom. halides also  
were found to be readily silylated with triethylsilane. The procedure is  
chemoselective and tolerates a wide variety of functional groups.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 100-00-5, 4-Nitrochlorobenzene 108-01-0, N,N-Dimethylethanolamine  
455-13-0, 4-Trifluoromethyl iodobenzene 586-78-7, 4-Nitrobromobenzene  
591-50-4, Iodobenzene 617-86-7, Triethylsilane 619-44-3,  
4-(Methoxycarbonyl)iodobenzene 623-00-7, 4-Cyanobromobenzene 636-98-6,  
4-Nitroiodobenzene 696-62-8, 4-Methoxyiodobenzene 766-77-8,  
Dimethylphenylsilane 776-76-1, Diphenylmethylsilane 998-30-1,  
Triethoxysilane 1120-90-7, 3-Iodopyridine 1711-02-0,  
4-Iodobenzoylchloride 1829-28-3, 2-(Ethoxycarbonyl)iodobenzene  
3058-39-7, 4-Cyanoiodobenzene 5332-24-1, 3-Bromoquinoline 5877-52-1  
6485-79-6, Triisopropylsilane 14857-34-2, Ethoxydimethylsilane  
15164-44-0 39887-30-4 51934-41-9, Ethyl 4-iodobenzoate 58313-23-8,  
3-(Ethoxycarbonyl)iodobenzene 69045-79-0, 2-Chloro-5-iodopyridine  
69113-59-3, 3-Cyanoiodobenzene 77350-52-8, 4-  
(Diethylaminocarbonyl)iodobenzene 226712-31-8, 4-  
(Butylcarbonyl)iodobenzene 403793-14-6

RL: RCT (Reactant); RACT (Reactant or reagent)

(chemoselective synthesis of functionalized aryltriethylsilanes by

platinum oxide catalyzed silylation of aryl halides with triethylsilane)

IT 121-44-8, Triethylamine, reactions 127-08-2, Potassium acetate  
127-09-3, Sodium acetate 534-17-8, Dicesium carbonate  
626-67-5, N-Methylpiperidine 7087-68-5, Diisopropylethylamine  
RL: RGT (Reagent); RACT (Reactant or reagent)  
(chemoselective synthesis of functionalized aryltriethylsilanes by  
platinum oxide catalyzed silylation of aryl halides with  
triethylsilane)

L32 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2005:99582 CAPLUS

DN 142:179274

TI Stabilizing agent for hydroalkoxysilane, stabilization method, and  
stabilized hydroalkoxysilane

IN Iwai, Makoto; Ferguson, Stephen P.

PA Dow Corning Toray Silicone Co., Ltd., Japan; Dow Corning Corporation

SO PCT Int. Appl., 14 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2005010122	A1	20050203	WO 2004-JP11322	20040730
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005047869	A	20050224	JP 2003-282773	20030730
EP 1651736	A1	20060503	EP 2004-771324	20040730
EP 1651736	B1	20070307		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
CN 1829785	A	20060906	CN 2004-80021894	20040730
AT 356181	T	20070315	AT 2004-771324	20040730
IN 2006KN00146	A	20061215	IN 2006-KN146	20060118
US 2007093670	A1	20070426	US 2006-566027	20061201
PRAI JP 2003-282773	A	20030730		
WO 2004-JP11322	W	20040730		

AB A stabilizing agent for a hydroalkoxysilane such as triethoxysilane and trimethoxysilane comprises a carboxylate such as an alkali metal salt or an alkali earth metal salt of a carboxylic acid having 1 to 18 carbon atoms such as sodium formate, sodium acetate, sodium propionate, sodium butyrate, sodium valerate or pentanoate, sodium oxalate, potassium formate, potassium acetate, magnesium acetate, and calcium acetate. A method for stabilizing a hydroalkoxysilane is characterized by combining it with a carboxylate.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 62-76-0, Sodium oxalate 127-08-2, Potassium acetate  
127-09-3, Sodium acetate 137-40-6, Sodium propionate  
141-53-7, Sodium formate 142-72-3, Magnesium acetate

## CAS ONLINE PRINTOUT

156-54-7, Sodium butyrate 590-29-4, Potassium formate  
RL: MOA (Modifier or additive use); USES (Uses)  
(stabilizer; stabilizing agent for hydroalkoxysilane, stabilization method, and stabilized hydroalkoxysilane)

IT 998-30-1, Triethoxysilane 2031-62-1,  
Methyldiethoxysilane 2487-90-3, Trimethoxysilane  
16881-77-9, Methyldimethoxysilane  
RL: TEM (Technical or engineered material use); USES (Uses)  
(stabilizing agent for hydroalkoxysilane, stabilization method, and stabilized hydroalkoxysilane)

L32 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:6011 CAPLUS

DN 138:56876

TI Rapid curable composition containing silyl group-terminated vinyl polymer excellent curability

IN Hasegawa, Nobuhiro; Nakagawa, Yoshiki

PA Kaneka Corporation, Japan

SO PCT Int. Appl., 105 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2003000749	A1	20030103	WO 2002-JP3539	20020409
	W: JP, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1406932	A1	20040414	EP 2002-714561	20020409
	EP 1406932	B1	20071212		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	JP 2005502737	T	20050127	JP 2003-507152	20020409
	US 2004210019	A1	20041021	US 2004-481283	20040524
PRAI	JP 2001-188550	A	20010621		
	WO 2002-JP3539	W	20020409		

AB A quick curing composition comprises a vinyl polymer having a crosslinking silyl group-terminated main chain, wherein the crosslinking silyl group is represented by the general formula  $-\text{SiY}\text{aR}_3\text{-a}$ , wherein R represents an C1-C20 alkyl group, an C6-C20 aryl group, a C7-C20 alkyl group or a triorganosiloxy group represented by (R') SiO-, R' is a univalent C1-C20 hydrocarbon group and the three R' groups may be the same or different, and, when there are two or more R groups, they may be the same or different; Y represents a hydroxyl group or a hydrolyzable group and, when there are two or more Y groups, they may be the same or different; and a represents 1, 2 or 3. Thus, a composition with skinning time 0.3 h was prepared

from reaction products of polybutyl acrylate, potassium undecenoate, and trimethoxysilane in the presence of dibutyltin diacetylacetonate (U 220, curing catalyst).

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 127-08-2DP, Potassium acetate, reaction products with Bu acrylate polymer 582-25-2DP, Potassium benzoate, reaction products with Bu acrylate-1,7-octadiene copolymer 2487-90-3DP, Trimethoxysilane, reaction products with alkenyl group-containing polymer 4420-74-0DP, 3-Mercaptopropyltrimethoxysilane, reaction products with alkenyl group-containing polymer 9003-49-0DP, Butyl acrylate homopolymer, reaction products with 10-undecenoic acid, potassium salt 9003-49-0P, Butyl

acrylate homopolymer 16881-77-9DP, Dimethoxymethylsilane, reaction products with alkenyl group-containing polymer 30600-43-2DP, Butyl acrylate-2-hydroxyethyl methacrylate copolymer, reaction products with isocyanatopropyltrimethoxysilane 137407-65-9DP, 1-(2-Trimethoxysilylethyl)-1,1,3,3-tetramethyldisiloxane, reaction products with alkenyl group-containing polymer 221172-33-4DP, Butyl acrylate-1,7-octadiene copolymer, reaction products with potassium benzoate

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation rapid curable composition containing silyl group-terminated vinyl polymer excellent curability)

L32 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:850112 CAPLUS

DN 137:330932

TI Deactivated electro-optic material and method of forming the same

IN Haertling, Gene H.

PA Teloptics, Corporation, USA

SO U.S. Pat. Appl. Publ., 8 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	US 2002163706	A1	20021107	US 2001-891689	20010626
	US 6963441	B2	20051108		
	US 6486996	B1	20021126	US 2000-530318	20000630
PRAI	US 2001-288757P	P	20010504		
	WO 1998-US22817	W	19981027		

AB A composition of matter (e.g., electrooptical material) is described comprising a glassifier; and chems. to form an electro-optic material having a refractive index responsive to elec. field; in which the glassifier combines with the chems. to form transmissive material, one of the chems. being chemical bonded to the glassifier such that the transmissive material is less responsive to the elec. field than the electro-optic material. An optical apparatus is also described comprising a first portion having an electro-optic material; a second portion having an refractive index which is less responsive to an elec. field than that of the first portion; and a pair of electrodes positioned to apply the elec. field to at least the first portion. A transmissive material is also described comprising a mixture comprised of (i) a plurality of materials comprising lead, lanthanum, zirconium, and titanium and (ii) a glass comprised of one of the lead, lanthanum, zirconium and titanium. A sol-gel is also described comprising a mixture of (i) TEOS, (ii) a compound comprised of lead, (iii) a compound comprised of lanthanum, (iv) a compound comprised of zirconium, and (v) a compound comprised of titanium. A method of fabricating the transmissive material is also described entailing providing a sol gel that includes constituent components which, in combination, are sufficient to enable formation of an electro-optic material having one refractive index in the absence of an elec. field and another significantly different index upon exposure to an elec. field, but which returns to the one index upon removal of the elec. field; processing the sol gel to form a transmissive material having a refractive index that is substantially insensitive to application of the elec. field, the processing comprising heating the sol gel to chemical react at least some of the components. An optical switch is also described comprising an electro-optic portion having electro-optic

properties juxtaposed adjacent a non-electro-optic portion forming a boundary.

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

- IT 998-30-1, TriEthoxy silane 1312-81-8, Lanthanum oxide (La2O3)  
1314-23-4, Zirconium oxide (ZrO2), reactions 1317-36-8, Lead oxide  
(PbO), reactions 13463-67-7, Titanium oxide (TiO2), reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(sol-gel composition; electrooptic materials and optical switches using  
total internal reflection)
- IT 127-08-2, Potassium acetate 1335-32-6, Lead subacetate  
3227-63-2, Zirconium acetate 10099-59-9, Lanthanum nitrate 14024-64-7,  
Titanium acetylacetonate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(transmissive material reactant; electrooptic materials and optical  
switches using total internal reflection)

L32 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:329918 CAPLUS

DN 137:47264

TI Rhodium(I)-Catalyzed Silylation of Aryl Halides with Triethoxysilane:  
Practical Synthetic Route to Aryltriethoxysilanes

AU Murata, Miki; Ishikura, Masanori; Nagata, Masayuki; Watanabe, Shinji;  
Masuda, Yuzuru

CS Department of Materials Science, Kitami Institute of Technology, Kitami,  
090-8507, Japan

SO Organic Letters (2002), 4(11), 1843-1845

CODEN: ORLEF7; ISSN: 1523-7060

PB American Chemical Society

DT Journal

LA English

OS CASREACT 137:47264

AB The specific silylation of aryl iodides and bromides with triethoxysilane  
(EtO)3SiH in the presence of NEt3 and a catalytic amount of  
[Rh(cod)(MeCN)2]BF4 provides the corresponding aryltriethoxysilanes in  
high yield.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

- IT 110-86-1, Pyridine, uses 121-44-8, Triethylamine, uses 127-08-2  
, Potassium acetate 584-08-7, Potassium carbonate 7087-68-5  
RL: CAT (Catalyst use); USES (Uses)  
(additive; practical synthetic route to aryltriethoxysilanes via  
rhodium-catalyzed silylation of aryl halides with triethoxysilane)
- IT 348-61-8 401-78-5, 1-Bromo-3-trifluoromethylbenzene 529-28-2,  
2-Iodoanisole 591-50-4, Iodobenzene 615-37-2, 2-Iodotoluene  
626-55-1, 3-Bromopyridine 696-62-8, 4-Iodoanisole 998-30-1,  
Triethoxysilane 5798-75-4, Ethyl 4-bromobenzoate 7335-27-5, Ethyl  
4-chlorobenzoate 13329-40-3, 4-Iodoacetophenone 51934-41-9, Ethyl  
4-iodobenzoate  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(practical synthetic route to aryltriethoxysilanes via  
rhodium-catalyzed silylation of aryl halides with triethoxysilane)

L32 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2002:251946 CAPLUS

DN 136:281143

TI Process for producing epoxyorganosilicon compounds by hydrosilylation  
IN Westmeyer, Mark D.; Bobbitt, Kevin L.; Ritscher, James S.

PA Crompton Corporation, USA

SO U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 465,603, abandoned.

## CAS ONLINE PRINTOUT

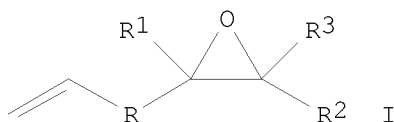
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6365696	B1	20020402	US 2000-573111	20000517
	WO 2001044255	A1	20010621	WO 2000-US32981	20001204
	W: BR, CN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	EP 1237894	A1	20020911	EP 2000-982437	20001204
	EP 1237894	B1	20030618		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	BR 2000016399	A	20021217	BR 2000-16399	20001204
	JP 2003516996	T	20030520	JP 2001-544745	20001204
	AT 243214	T	20030715	AT 2000-982437	20001204
	US 2002103323	A1	20020801	US 2002-67798	20020208
PRAI	US 1999-465603	B2	19991217		
	US 2000-573111	A	20000517		
	WO 2000-US32981	W	20001204		
OS	MARPAT 136:281143				
GI					



AB The title process comprises: reacting (a) an ethylenically unsatd. epoxide I (R is a single bond or an alkylene; R1 is a hydrogen, alkyl, straight, branched, or cyclic; R2 and R3 are individually hydrogen, straight, branched or cyclic alkyl, or any two of R1, R2 and R3, taken together are alkylene and, combined with the carbon atom or atoms to which they are attached, form a C5-12 ring, optionally containing alkyl pendants; and the number of carbon atoms in R, R1, R2, and R3 are such that the total number of carbon atoms in the epoxide is 4-50), with (b) an alkoxysilane R4n(OR4)3-nSiH (R4 is a branched or linear alkyl group of 1 to 18 carbon atoms, a cyclic alkyl group of four to eight carbon atoms or an aryl, alkaryl, or aralkyl group of six to twelve carbon atoms, optionally containing halogen, oxygen, or nitrogen substituents with the proviso that such substituents do not interfere with either hydrosilylation or promotion, and n is 0-2), in the presence of (c) a catalytically effective amount of a platinum catalyst and (d) an ammonium propionate or a sodium propionate. An epoxy silane was prepared from 4-vinylcyclohexene monoxide and trimethoxysilane.

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 137-40-6, Sodium propionate 17496-08-1, Ammonium propionate  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (process for producing epoxyorganosilicon compds. by hydrosilylation)

IT 106-86-5 930-22-3 998-30-1, Triethoxysilane 2031-62-1  
 , Methyl-diethoxysilane 2487-90-3, Trimethoxysilane  
 16881-77-9, Methyl-dimethoxysilane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (process for producing epoxyorganosilicon compds. by hydrosilylation)

L32 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:453073 CAPLUS

DN 135:46305

TI Preparation of epoxyorganosilicon compounds by platinum-catalyzed hydrosilylation of ethylenically unsaturated epoxides with organosilicon hydrides in presence of carboxylate salts

IN Westmeyer, Mark D.; Bobbit, Kevin L.; Ritscher, James S.

PA Crompton Corporation, USA

SO PCT Int. Appl., 17 pp.

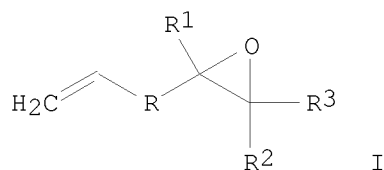
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001044255	A1	20010621	WO 2000-US32981	20001204
	W: BR, CN, JP, KR				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	US 6365696	B1	20020402	US 2000-573111	20000517
	EP 1237894	A1	20020911	EP 2000-982437	20001204
	EP 1237894	B1	20030618		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	BR 2000016399	A	20021217	BR 2000-16399	20001204
	JP 2003516996	T	20030520	JP 2001-544745	20001204
	AT 243214	T	20030715	AT 2000-982437	20001204
PRAI	US 1999-465603	A	19991217		
	US 2000-573111	A	20000517		
	WO 2000-US32981	W	20001204		
OS	CASREACT 135:46305; MARPAT 135:46305				
GI					



AB Epoxyorganosilicon compds. are prepared by hydrosilylation of ethylenically unsatd. epoxides I [R = bond, alkylene optionally containing pendant alkyl groups; R1 = H, (un)branched or cyclic alkyl; R2, R3 = H, (un)branched or cyclic alkyl, or any 2 R1, R2 or R3 taken together are alkylene and combined with the C atom(s) to which they are attached form a C5-12 ring optionally containing pendant alkyl groups, and the number of C atoms in R-R3 are

such that the total number of C atoms in the epoxide is from 4-50], preferably 4-vinylcyclohexene monoxide (VCMX) or butadiene monoxide, by an organosilicon hydride, preferably an alkoxysilane such as (MeO)<sub>3</sub>SiH, (EtO)<sub>3</sub>SiH, (MeO)<sub>2</sub>Si(Me)H, (EtO)<sub>2</sub>Si(Me)H, or an organosiloxane [Ra(H)bSiO(4-a-b)/2]n (R = monovalent hydrocarbon radical; a = 1-2.99, b = 0.001-1, a + b = 1.5-3.0; n = 2-400), preferably MDxD'yM [x = 0-200, y = 1-200, M = O1/2SiMe<sub>3</sub>, D' = OSi(H)Me, D = OSiMe<sub>2</sub>] in the presence of a platinum catalyst, preferably chloroplatinic acid, and a carboxylic acid salt, preferably ammonium or sodium propionate. Thus, in an example,



treating 10% molar excess VCMX (97% purity) with (MeO)<sub>3</sub>SiH, 3000 ppm MeOH, 500 ppm HOAc, 250 ppm ammonium propionate and 10 ppm Pt as chloroplatinic acid at 90° followed by 1 h at 90° after addition was completed gave 96.2% trimethoxy[2-(7-oxabicyclo[4.1.0]hept-3-yl)ethyl]silane. Also taught herein is the use of carboxylic acid salts in compns. of epoxyorganosilicon compds. to provide compns. of greater stability.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 62-54-4, Calcium acetate 127-08-2, Potassium acetate  
127-09-3, Sodium acetate 137-40-6, Sodium propionate  
540-69-2, Ammonium formate 582-25-2, Potassium benzoate 631-61-8,  
Ammonium acetate 2923-18-4, Sodium trifluoroacetate 7563-33-9,  
Ammonium isovalerate 10534-59-5, Tetrabutylammonium acetate  
10581-12-1, Tetramethylammonium acetate 14221-02-4,  
Tetrakis(triphenylphosphine)platinum 16919-58-7, Ammonium  
hexachloroplatinate 16941-12-1, Hexachloroplatinic acid 17496-08-1,  
Ammonium propionate 22221-10-9, Copper 2-ethylhexanoate 81032-58-8,  
Karstedt catalyst

RL: CAT (Catalyst use); USES (Uses)

(platinum-catalyzed hydrosilylation of vinylcyclohexene monoxide with organosilicon hydrides in presence of carboxylate salts)

IT 106-86-5 930-22-3 998-30-1, Triethoxysilane 1873-88-7  
2031-62-1, Methyl(diethoxy)silane 2487-90-3,  
Trimethoxysilane 3277-26-7 16881-77-9, Methyl(dimethoxy)silane

RL: RCT (Reactant); RACT (Reactant or reagent)

(platinum-catalyzed hydrosilylation of vinylcyclohexene monoxide with organosilicon hydrides in presence of carboxylate salts)

L32 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:565967 CAPLUS

DN 131:186960

TI Methods for the preparation of nanoparticles of metals and oxides

IN Garti, Nissim; Berkovich, Yana

PA Yissum Research Development Company of the Hebrew University of Jerusalem, Israel

SO PCT Int. Appl., 13 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9943427	A1	19990902	WO 1999-IL97	19990216
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
IL 123468	A	20010826	IL 1998-123468	19980226
AU 9925431	A	19990915	AU 1999-25431	19990216
EP 1060012	A1	20001220	EP 1999-905152	19990216
EP 1060012	B1	20030910		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
AT 249273	T	20030915	AT 1999-905152	19990216
US 6706795	B1	20040316	US 2000-622299	20000911

## CAS ONLINE PRINTOUT

PRAI IL 1998-123468 A 19980226  
 WO 1999-IL97 W 19990216

AB Nanoparticles (1-6 nm) of transition metals (e.g., Pt, Pd), alloys, metal oxides (e.g., FeOOH, SiO<sub>2</sub>), and ceramics are prepared by chemical reaction under mild conditions using precursor solns. of complex liqs. (e.g., microemulsions, liquid crystals) containing surfactants and alkoxides. The resulting nanoparticles are dispersed in polymer solns. as fine colloids, and used to form transparent nanoparticle-containing plastic films. The water is non freezing, the mild conditions are atmospheric pressure and a temperature range

of room temperature to 70°C, and the reaction is selected among a hydrolysis, reduction and exchange process. In an example, a Pd colloidal dispersion was prepared from a solution containing K<sub>2</sub>PdCl<sub>4</sub>, Aliquat 336, dichloroethane and water, which was reacted with NaHCO<sub>2</sub> under Ar at 75°C for 1 h. The solvent was evaporated off, leaving a waxy residue which was washed and dried. The Pd nanoparticles were redispersed in polyvinylalc., and used for forming a transparent film coating on a glass plate.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

IT 78-10-4 139-12-8, Aluminum acetate 142-72-3, Magnesium acetate 555-31-7 998-30-1, Triethoxysilane 2171-98-4, Zirconium isopropoxide 2487-90-3, Trimethoxysilane 7439-88-5D, Iridium, salts, uses 7439-89-6D, Iron, salts, uses 7440-02-0D, Nickel, salts, uses 7440-05-3D, Palladium, salts, uses 7440-06-4D, Platinum, salts, uses 7440-16-6D, Rhodium, salts, uses 7440-18-8D, Ruthenium, salts, uses 7440-48-4D, Cobalt, salts, uses 7440-50-8D, Copper, salts, uses 7446-70-0, Aluminum chloride, uses 7447-39-4, Copper dichloride, uses 7699-43-6, Zirconium oxychloride 7705-08-0, Ferric chloride, uses 7758-94-3, Ferrous chloride 7786-30-3, Magnesium chloride, uses 10025-98-6, Dipotassium palladium tetrachloride 10025-99-7, Dipotassium platinum tetrachloride 13472-30-5 14293-88-0, Potassium orthosilicate  
 RL: NUU (Other use, unclassified); USES (Uses)

(precursors; production of nanosized particles of metals and oxides by hydrolysis, reduction or ion exchange)

IT 64-17-5, Ethanol, uses 67-56-1, Methanol, uses 67-63-0, Isopropanol, uses 78-83-1, Isobutanol, uses 141-53-7, Sodium formate 1333-74-0, Hydrogen, uses

RL: NUU (Other use, unclassified); USES (Uses)

(reducing agents; production of nanosized particles of metals and oxides by hydrolysis, reduction or ion exchange)

L32 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1990:535172 CAPLUS

DN 113:135172

TI Manufacture of crystalline, tubular copper potassium sodium silicates

IN Gupta, Balaram; Saw, Cheng K.; Kenny, Malcolm E.; Harrington, Bruce A.

PA Hoechst Celanese Corp., USA

SO U.S., 4 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	US 4942026	A	19900717	US 1989-349687	19890510
PRAI	US 1989-349687		19890510		

AB The tubular silicates, having general formula Na<sub>2</sub>-2xK<sub>2</sub>CuSi<sub>4</sub>O<sub>10</sub> (x = 0, 0.5, or 1), are manufactured by combining an organosilicate at room temperature and

in alc. solution with stoichiometric amts. of a Cu salt and  $\geq 1$  salts of Na and K to form a gel, and sintering the (dried) gel at a temperature and for a time sufficient to form the tubular silicates. This method avoids the melting of the oxide reagents, and the silicates are useful as reinforcing agents for ceramics and polymers.  $K_2CuSi_4O_{10}$  was manufactured from  $Cu(OAc)_2 \cdot H_2O$  16.09, KOAc 15.72, and  $Si(OEt)_4$  66.8 g in 320 mL EtOH and 160 mL water. The resulting gel was calcined at  $750^\circ$  for 7 days to give the tubular silicate.

IT 127-08-2, Potassium acetate 127-09-3, Sodium acetate  
142-71-2, Copper acetate 998-30-1, Triethoxysilane  
RL: USES (Uses)  
(in tubular copper potassium sodium silicate manuf)

L32 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1983:470809 CAPLUS

DN 99:70809

OREF 99:11007a

TI Activation of silicon-hydrogen, silicon-oxygen, and silicon-nitrogen bonds in heterogeneous phase. Some new methods in organic synthesis

AU Corriu, R. J. P.; Perz, R.; Reye, C.

CS Lab. Organometall., Univ. Sci. Tech. Languedoc, Montpellier, 34060, Fr.

SO Tetrahedron (1983), 39(6), 999-1009

CODEN: TETRAB; ISSN: 0040-4020

DT Journal

LA English

AB Anionic activation of Si-H, Si-O and Si-N bonds by F<sup>-</sup> under heterogeneous conditions is reported: Si-H activated by KF or CsF is a very powerful and selective reducing reagent; the carbonyl group of aldehydes, ketones or esters can be reduced without reduction of other functional groups (C=C, NO<sub>2</sub>, Br, amido). Furthermore, selective redns. of aldehydes in the presence of ketones and ketones in the presence of carboxylic esters are also possible. CsF in the presence of alkoxysilanes is efficient in promoting Michael addns. of monoketones and arylacetonitriles on different kinds of Michael acceptors such as  $\alpha,\beta$ -unsatd. ketones, esters, nitriles and even amides. This constitutes an extension of Michael reaction since the addition occurs even with crowded ketones. N,N-Bis(silyl)enamines activated by fluoride ions react with carbonyl compds. and provide an interesting route to 2-aza-1,3 dienes.

IT 333-20-0 590-29-4 29801-94-3

RL: CAT (Catalyst use); USES (Uses)  
(catalyst, for alcoholysis of silanes)

IT 998-30-1 2031-62-1

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reduction by, of carbonyl compds., catalysts for)

L32 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1983:52719 CAPLUS

DN 98:52719

OREF 98:8097a,8100a

TI Improved procedure for the selective reduction of carbonyl compounds and carboxylic acid esters by potassium salt-induced hydrosilylation

AU Chuit, C.; Corriu, R. J. P.; Perz, R.; Reye, C.

CS Lab. Organometall., Univ. Sci. Tech. Languedoc, Montpellier, F-34060, Fr.

SO Synthesis (1982), (11), 981-4

CODEN: SYNTBF; ISSN: 0039-7881

DT Journal

LA English

OS CASREACT 98:52719

AB Title redns. were carried out using  $MeSiH(OEt)_2$  or  $Me_3SiO(SiHMeO)_nSiMe_3$  as hydrosilylation agents in DMF or Me<sub>2</sub>SO containing KF or HCO<sub>2</sub>K. Approx. 15

redns. of aliphatic, alicyclic, and aromatic carbonyl compds. and esters were carried out. The product alcs. are obtained by acidic hydrolysis or methanolysis of the intermediate hydrosilylation products. Aldehyde groups are selectively reduced in the presence keto groups and keto groups are selectively reduced in the presence of a carboxylate ester.

IT 590-29-4 7789-23-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(hydrosilylation of carbonyl compds. and esters in presence of)

IT 2031-62-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(reduction by, of carbonyl compds. and esters)

L32 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1979:138436 CAPLUS

DN 90:138436

OREF 90:21973a,21976a

TI Catalyst for the polymerization of olefins

PA Montedison S.p.A., Italy

SO Neth. Appl., 25 pp.

CODEN: NAXXAN

DT Patent

LA Dutch

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	NL 7805410	A	19781128	NL 1978-5410	19780518
	NL 186701	B	19900903		
	NL 186701	C	19910201		
	DK 7802195	A	19781125	DK 1978-2195	19780518
	DK 151891	B	19880111		
	DK 151891	C	19880718		
	SE 7805739	A	19781125	SE 1978-5739	19780518
	SE 440224	B	19850722		
	SE 440224	C	19851031		
	NO 7801728	A	19781127	NO 1978-1728	19780518
	NO 153575	B	19860106		
	NO 153575	C	19860416		
	AU 7836281	A	19791122	AU 1978-36281	19780519
	AU 522013	B2	19820513		
	AT 7803649	A	19801115	AT 1978-3649	19780519
	AT 362931	B	19810625		
	GB 1601426	A	19811028	GB 1978-20685	19780519
	CA 1120910	A1	19820330	CA 1978-303783	19780519
	BR 7803292	A	19781219	BR 1978-3292	19780523
	FR 2392037	A1	19781222	FR 1978-15294	19780523
	FR 2392037	B1	19800411		
	ES 470120	A1	19790101	ES 1978-470120	19780523
	ZA 7802971	A	19790530	ZA 1978-2971	19780523
	US 4218339	A	19800819	US 1978-908670	19780523
	BE 867400	A1	19781124	BE 1978-187971	19780524
	JP 54016393	A	19790206	JP 1978-62144	19780524
	JP 63066842	B	19881222		
	SU 812185	A3	19810307	SU 1978-2620109	19780524
PRAI	IT 1977-23942	A	19770524		

AB Olefin polymerization catalyst components consist of the reaction products of a Mg compound, i.e., Mg halides, organomagnesium compds., Mg oxides, or Mg hydroxides, a Ti, V, or Zr compound containing  $\geq 2$  metal-oxygen bonds, and a halogenating-reducing agent other than an Al halide. Thus, 2.4 g  $\text{MgCl}_2$  and 17 g  $\text{Ti}(\text{OBu})_4$  [5593-70-4] were heated 4 h at  $160^\circ$ , cooled to  $60^\circ$ , diluted with 80 mL heptane, stirred 1 h at  $60^\circ$ , treated

with 5.8 mL SiCl<sub>4</sub> in 20 mL heptane, and heated 90 min at 98°. The suspension was cooled to 60°, treated over 2 h with 19.4 mL polymethylhydrogensiloxane, heated 1 h at 98°, cooled, and filtered to give a solid catalyst component (A). A mixture of 1000 mL hexane, 1.5 g iso-Bu<sub>3</sub>Al [100-99-2], and 0.014 g A was used to polymerize ethylene in the presence of H at 85° and 7.8 atm, giving after 4 h 170 g polyethylene [9002-88-4] with melt index 3.5 g/10 min (ASTM D1238 E).

IT 64-17-5D, reaction products with magnesium 75-54-7 100-99-2, uses and miscellaneous 142-72-3 693-04-9 947-42-2 998-30-1 1066-35-9 1309-48-4, uses and miscellaneous 2386-64-3 4200-76-4 5593-70-4 7439-95-4D, reaction products with ethanol 7786-30-3, uses and miscellaneous 10025-78-2 10026-04-7  
RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for polymerization of ethylene)

L32 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1969:528345 CAPLUS

DN 71:128345

OREF 71:23897a,23900a

TI Range-finding toxicity data. VII

AU Smyth, Henry F., Jr.; Carpenter, Charles P.; Weil, Carrol S.; Pozzani, Urbano C.; Striegel, Jean A.; Nycum, Judith S.

CS Carnegie-Mellon Univ., Pittsburgh, PA, USA

SO American Industrial Hygiene Association Journal (1958-1999) (1969), 30(5), 470-6

CODEN: AIHAAP; ISSN: 0002-8894

DT Journal

LA English

AB Acute toxicity and irritation data on about 200 compds., accumulated in a continuing program for screening potential com. products are presented. All materials are either in com. production or have been evaluated for com. potential within the past few years. The range-finding test is relied on only to make it possible to prediction the comparative hazards of handling new chems. and yield no more than an indication of the degree of care necessary to protect exposed workers.

IT 62-54-4 66-25-1 75-56-9, biological studies 78-13-7 78-19-3  
78-86-4 78-87-5 78-89-7 78-97-7 79-00-5 79-01-6 79-34-5  
80-52-4 89-19-0, Phthalic acid, butyl decyl ester 89-94-1 93-96-9  
96-05-9, Methacrylic acid, allyl ester 97-84-7 97-88-1 98-54-4  
100-40-3 102-69-2 104-76-7, biological studies 105-53-3, Malonic acid, diethyl ester 105-60-2, properties 106-91-2 107-06-2  
108-88-3, biological studies 108-91-8, biological studies 108-94-1, biological studies 109-52-4, biological studies 109-59-1 109-75-1  
109-92-2 110-58-7 110-67-8 110-95-2 111-21-7 111-35-3 111-83-1  
112-33-4 112-72-1 116-11-0 119-07-3, Phthalic acid, decyl octyl ester 123-51-3 124-16-3 126-33-0 127-08-2 140-76-1  
142-29-0 143-33-9 286-20-4 498-66-8 500-00-5 512-56-1 529-34-0  
542-88-1 555-31-7 557-34-6 583-58-4 583-60-8 584-08-7 592-01-8  
624-49-7, Fumaric acid, dimethyl ester 624-83-9 627-63-4 629-60-7  
629-96-9 638-38-0 762-04-9 822-06-0 928-55-2 999-61-1, Acrylic acid, 2-hydroxypropyl ester 1069-23-4 1070-42-4 1121-84-2  
1185-55-3 1303-96-4 1305-62-0 1310-58-3, biological studies  
1317-39-1, biological studies 1331-24-4 1559-36-0 1589-49-7  
1606-67-3 1885-14-9 2095-06-9 2156-96-9, Acrylic acid, decyl ester  
2216-68-4 2487-90-3 2499-95-8, Acrylic acid, hexyl ester  
2530-83-8 2556-73-2 2768-02-7 2807-30-9 2886-89-7 2973-10-6  
2996-95-4 2997-01-5 3030-47-5 3033-62-3 3048-64-4 3048-65-5  
3065-46-1 3068-88-0 3121-61-7, Acrylic acid, 2-methoxyethyl ester  
3130-19-6 3182-26-1 3195-79-7 3212-60-0 3388-04-3 3425-89-6  
3710-30-3 3763-72-2 3883-43-0 4075-81-4 4246-51-9 4275-28-9

4318-42-7 4420-74-0 4711-96-0 4781-76-4 5240-72-2 5749-78-0  
 5834-84-4 6130-87-6 6292-01-9 6607-53-0 6628-83-7 7251-90-3,  
 Ethanol, 2-butoxy-, acrylate 7251-90-3, Acrylic acid, 2-butoxyethyl  
 ester 7538-45-6 7632-00-0 7632-51-1 7681-49-4, biological studies  
 7718-98-1 7722-64-7 7727-18-6 7727-54-0 7758-29-4 7782-61-8  
 7784-27-2 7784-46-5 7791-18-6, Magnesium chloride, hexahydrate  
 7803-55-6 10027-06-2, Acrylic acid, 2-norbornyl ester 10031-43-3  
 10043-35-3, biological studies 10049-05-5 10137-90-3 10215-33-5  
 10436-39-2 10476-95-6, 2-Propene-1,1-diol, 2-methyl-, diacetate  
 10580-52-6 10580-77-5 12001-89-7, Chromium, bis(cumene)- 12041-76-8  
 12046-71-8 12208-54-7, Tungstic acid (H<sub>6</sub>W<sub>7</sub>O<sub>24</sub>), hexaammonium salt,  
 hexahydrate 13025-29-1 13897-55-7 14689-97-5 15131-55-2  
 15481-65-9 15568-57-7 16219-75-3 16607-80-0 17264-01-6  
 19721-74-5 19836-78-3 19858-14-1 20667-12-3 21961-08-0  
 22590-50-7 22637-13-4 25154-52-3 25377-73-5 25724-11-2  
 25724-33-8 25724-34-9 25724-35-0 25724-50-9 25724-54-3,  
 1,6-Hexanediol, 2-ethyl-, dibenzoate 25724-58-7, Phthalic acid, decyl  
 hexyl ester 25724-60-1, Succinic acid, bis[2-(2-ethylbutoxy)ethyl] ester  
 25726-97-0 25726-99-2 25727-08-6 25756-29-0 25756-33-6  
 25876-07-7 25991-93-9 26256-87-1 26259-90-5 26447-42-7  
 26447-43-8 26447-45-0 26637-71-8 26680-55-7 26853-76-9  
 30136-13-1 36788-39-3

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)  
 (toxicity of)

L32 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1952:66095 CAPLUS

DN 46:66095

OREF 46:10999a-i

TI Some applications of deuterium and of heavy oxygen to the chemistry of  
 silicon

AU Khaskin, I. G.

SO Doklady Akademii Nauk SSSR (1952), 85, 129-82

CODEN: DANKAS; ISSN: 0002-3264

DT Journal

LA Unavailable

GI For diagram(s), see printed CA Issue.

AB As expected from the analogy with the C-H bond, no isotopic exchange was  
 observed between HSiEt<sub>3</sub>, HSiPh<sub>3</sub>, or HSi(OEt)<sub>3</sub>, and D<sub>2</sub>O, EtOD, or Et<sub>2</sub>ND,  
 even on 140 hrs. heating at 118° with solns. of acids or bases in  
 D<sub>2</sub>O or EtOD. H being intermediate on the electronegativity scale between  
 C and Si, the polarizations of the bonds are -C-+H and +Si--H, i.e.  
 nucleophilic substitution is favored with Si. Exchange between silanes  
 and proton donors is little probable, as it should be accompanied by a  
 change of the direction of the polarization of the Si-H bond. In  
 silanols, R<sub>3</sub>SiOH, the Si is more electrophilic than in silanes, and  
 nucleophilic exchange in the OH group should be possible. This was  
 confirmed by expts. with Et<sub>2</sub>SiOH and H<sub>2</sub>O enriched with O<sup>18</sup>; complete  
 exchange took place both without catalyst and with addns. of acids or  
 bases. As an example, Et<sub>3</sub>SiOH was heated with a solution of NaOH in H<sub>2</sub>O with  
 124 γ excess d., 2.5 hrs. at 100°; the excess d. of the H<sub>2</sub>O  
 became 103 γ, as compared with 98 γ, for full exchange. The  
 heavy Et<sub>3</sub>SiOH produced was then heated with light H<sub>2</sub>O, 5 hrs. at  
 100°; the H<sub>2</sub>O showed an excess d. of 21 γ, as compared with  
 24 γ, for complete exchange. With Ph<sub>3</sub>SiOH and H<sub>2</sub>O<sup>18</sup>, 40% exchange  
 was found in 1 hr. at 100°. In the exchange of silanols in an alkaline  
 medium, the nucleophilic agent is the OH group; in an acid medium, the  
 interaction with the nucleophilic H<sub>2</sub>O mols. proceeds by way of the  
 hydroxonium ion. In silica gel dried at 400°, both the O of the  
 structural H<sub>2</sub>O, and the nonhydroxyl O are exchanged. A sample containing

3.98% structural H<sub>2</sub>O, heated with H<sub>2</sub>O<sub>18</sub> in a sealed tube 30 hrs. at 100°, exchanged 19% of its O. Silica gel entirely free from structural H<sub>2</sub>O as a result of prolonged calcination at 1200°, exchanged 17% of its O. In the hydrolysis of Si(OEt)<sub>4</sub>, at 78°, with H<sub>2</sub>O<sub>18</sub> (124 γ excess d.), the EtOH was light both in the absence of a catalyst and with addns. of acid or alkali. This decides against the hydrolysis scheme and in favor of the scheme. On the other hand, in the hydrolysis of Si(OCOMe)<sub>4</sub> with H<sub>2</sub>O<sub>18</sub> (excess d. 124 γ), which takes place violently at the solid-liquid boundary, the H<sub>2</sub>O obtained from the AcOH produced had an excess d. of 45-70 γ. This points to a scheme to the exclusion of the scheme. With respect to the mobility of H, no H-D exchange was observed at 100° in the absence of a catalyst between Si(OCOMe)<sub>4</sub> and AcOD. The exchange does occur in the presence of some AcONa, and, at the same time, there is an exchange of the Ac groups. In 52 hrs. at 100°, with Si(OCOMe)<sub>4</sub>:AcOD:AcONa = 1:2.3:0.1, 92% of all the H of the system was exchanged. In Ac<sub>2</sub>O:AcOD:AcONa = 1:0.85:0.05, in 15 hrs. at 100°, 33% of the H was exchanged. In this case, too, there is also mutual exchange of the Ac groups. In AcOH containing 5500 γ of D in the OH group, only 57 γ, has passed into the Ac group in 7 months at room temperature. The mobility of H in Si(OCOMe)<sub>4</sub> is further confirmed by its condensation with BzH, which takes place in the presence of AcONa only, giving cinnamic acid with a yield of 15% in 13 hrs. at 155°, and 4% in 120 hrs. at 100°. With Na succinate 5-6% phenylparaconic acid and some cinnamic acid were obtained in 7-10 hrs. at 100°, but no isophenylcrotonic acid.

IT 127-09-3, Sodium acetate  
(exchange reaction with AcOD and Si(OCOMe)<sub>4</sub> or Ac<sub>2</sub>O, and reaction of BzH and Si(OCOMe)<sub>4</sub> in presence thereof)

IT 998-30-1, Silane, triethoxy-  
(exchange with O-containing compds.)

L32 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1951:2606 CAPLUS

DN 45:2606

OREF 45:423i,424a

TI Isotope exchange of hydrogen bound to silicon

AU Brodskii, A. I.; Khaskin, I. G.

CS L. V. Pisarzhevskii Inst. Phys. Chem., Acad. Sci. Ukr. S.S.R., Kiev

SO Doklady Akademii Nauk SSSR (1950), 74, 299-301

CODEN: DANKAS; ISSN: 0002-3264

DT Journal

LA Unavailable

AB HSiEt<sub>3</sub>, HSiPh<sub>3</sub>, and HSi(OEt)<sub>3</sub>, heated with D<sub>2</sub>O or with EtOD for up to 335 hrs. to over 100° showed either no, or only a semblance of, H-D exchange, attributed to mech. occlusion of D<sub>2</sub>O rather than to actual exchange. This neg. result, observed also in the presence of H<sub>2</sub>SO<sub>4</sub>, KOH, AcONa, and KHSO<sub>4</sub>, parallels Stewart and Harman's (C.A. 40, 4653.8) analogous neg. observation on the corresponding C compds. Because of the Si-H- polarization of the Si-H bond, exchange could take place only by a nucleophilic mechanism which is improbable on account of the low stability of the H- ion.

IT 127-09-3, Sodium acetate  
(deuterium exchange with Si-bound H in)

IT 617-86-7, Silane, triethyl- 789-25-3, Silane, triphenyl-  
998-30-1, Silane, triethoxy-  
(reaction with EtOD or D<sub>2</sub>O)

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